

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (original) An apparatus for reducing the aerodynamic base drag of a bluff body having a leading end, a trailing end, a top surface, opposing left and right side surfaces, and a base surface at the trailing end substantially normal to a longitudinal centerline of the bluff body, said base surface joined to the left side surface at a left trailing edge, to the right side surface at a right trailing edge, and to the top surface at a top trailing edge, said apparatus comprising:

left and right vertical boattail plates orthogonally attached to the base surface of the bluff body and inwardly offset from the left and right trailing edges, respectively, to produce left and right vertical channels which generate, in a flowstream substantially parallel to the longitudinal centerline, respective left and right vertically-aligned vortical structures therein, said left and right vertical boattail plates each having a plate width defined by a rear edge spaced from the base surface, and a peak plate width at a location between top and bottom ends thereof, corresponding to a peak vortex of the respective vertically-aligned vortical structures.

2. (currently amended) The apparatus of claim 1,

further comprising an upper horizontal boattail plate orthogonally attached to the base surface of the bluff body and inwardly offset from the top trailing edge to produce an upper horizontal channel which generates, in the flowstream, an upper horizontally-aligned vortical structure therein, said upper horizontal boattail plate having a plate width defined by a rear edge spaced from the base surface, and a peak plate width at a location between left and right ends thereof, corresponding to a peak vortex of the upper horizontally-aligned vortical structure, with the left end of the horizontal boattail plate adjacent the top end of the left vertical boattail plate without extending beyond each other, and the right end of the horizontal boattail plate adjacent the top end of the right vertical boattail plate without extending beyond each other.

3. (original) The apparatus of claim 1 or 2,

wherein the rear edges of the boattail plates are convexedly curvilinear.

4. (original) The apparatus of claim 1 or 2,

wherein the rear edges of the boattail plates are angled to produce wedge-shaped boattail plates.

5. (original) An apparatus for reducing the aerodynamic base drag of a bluff body having a leading end, a trailing end, a top surface, opposing left and right side surfaces, and a base surface at the trailing end substantially normal to a longitudinal centerline of the bluff body, said base surface joined to the left side surface at a left trailing edge, to the right side surface at a right trailing edge, and to the top surface at a top trailing edge, said apparatus comprising:

left and right vertical boattail plates orthogonally attached to the base surface of the bluff body and inwardly offset from the left and right trailing edges, respectively, to produce left and right vertical channels which generate, in a flowstream substantially parallel to the longitudinal centerline, respective left and right vertically-aligned vortical structures therein, said left and right vertical boattail plates having a non-rectangular geometry with a peak plate width at a location between top and bottom ends of said vertical plates.

6. (currently amended) The vehicle attachment of claim 5,

further comprising an upper horizontal boattail plate orthogonally attached to the base surface of the bluff body and inwardly offset from the top trailing edge to produce an upper horizontal channel which generates, in the flowstream, an upper horizontally-aligned vortical structure therein, said upper horizontal boattail plate having a non-rectangular geometry with a peak plate width at a location between left and right ends of said upper

horizontal boattail plate, with the left end of the horizontal boattail plate adjacent the top end of the left vertical boattail plate without extending beyond each other, and the right end of the horizontal boattail plate adjacent the top end of the right vertical boattail plate without extending beyond each other.

7. (original) The vehicle attachment of claim 5 or 6,
wherein said boattail plates have a convexedly curvilinear geometry.
8. (original) The vehicle attachment of claim 5 or 6,
wherein said boattail plates have a triangular geometry.
9. (original) A vehicle attachment for reducing the aerodynamic base drag of a bluff body having a leading end, a trailing end, a top surface, opposing left and right side surfaces, and a base surface at the trailing end substantially normal to a longitudinal centerline of the bluff body, said base surface joined to the left side surface at a left trailing edge, to the right side surface at a right trailing edge, and to the top surface at a top trailing edge, said apparatus comprising:

left and right vertical boattail plates orthogonally connectable to the base surface of the bluff body so as to be inwardly offset from the left and right trailing edges, respectively, and produce left and right vertical channels

which generate, in a flowstream substantially parallel to the longitudinal centerline, respective left and right vertically-aligned vortical structures therein, said left and right vertical boattail plates each having a plate width defined by a rear edge spaced from the base surface, and a peak plate width at a location between top and bottom ends thereof, corresponding to a peak vortex of the respective vertically-aligned vortical structures.

10. (currently amended) The vehicle attachment of claim 9,

further comprising an upper horizontal boattail plate orthogonally attached to the base surface of the bluff body and inwardly offset from the top trailing edge to produce an upper horizontal channel which generates, in the flowstream, an upper horizontally-aligned vortical structure therein, said upper horizontal boattail plate having a plate width defined by a rear edge spaced from the base surface, and a peak plate width at a location between left and right ends thereof, corresponding to a peak vortex of the upper horizontally-aligned vortical structure, with the left end of the horizontal boattail plate adjacent the top end of the left vertical boattail plate without extending beyond each other, and the right end of the horizontal boattail plate adjacent the top end of the right vertical boattail plate without extending beyond each other.

11. (original) The vehicle attachment of claim 9 or 10,

wherein the rear edges of the boattail plates are convexedly curvilinear.

12. (original) The vehicle attachment of claim 9 or 10,

wherein the rear edges of the boattail plates are angular to produce wedge-shaped boattail plates.

13. (canceled)